



MSOffice Excel - Part 1

Getting Started with Excel



Objectives

- Understand the use of spreadsheets and Excel
- Learn the parts of the Excel window
- Scroll through a worksheet and navigate between worksheets
- Create and save a workbook file
- Enter, analyze, and present quantitative data
- Enter text, numbers, and dates into a worksheet

Objectives

- Resize, insert, and remove columns and rows
- Select and move cell ranges
- Insert formulas and functions
- Insert, delete, move, and rename worksheets
- Work with editing tools
- Format data using patterned text and flash fill
- Insert and format custom borders
- Preview and print a workbook

Visual Overview

The ribbon contains buttons that you click to execute commands to work with Excel. You can pin the ribbon to leave it fully displayed, as shown here.

The ribbon is organized into tabs. Each tab has commands related to particular activities or tasks.

The formula bar displays the value or formula entered in the active cell.

Excel stores spreadsheets in files called workbooks. The name of the current workbook appears in the title bar.

The Name box displays the cell reference of the active cell. In this case, the active cell is cell B10.

A group of cells in a rectangular block is called a cell range (or range). If the blocks are not connected, as shown here, it is a nonadjacent range.

The currently selected cell is the active cell.

The row headings are numbers along the left side of the workbook window that identify the different rows of the worksheet.

A workbook is made up of sheets. Each sheet is identified by a sheet name, which appears in a sheet tab.

The status bar provides information about the workbook.

Inactive sheets are not visible in the workbook window. Their sheet tabs are not underlined and the sheet name is black.

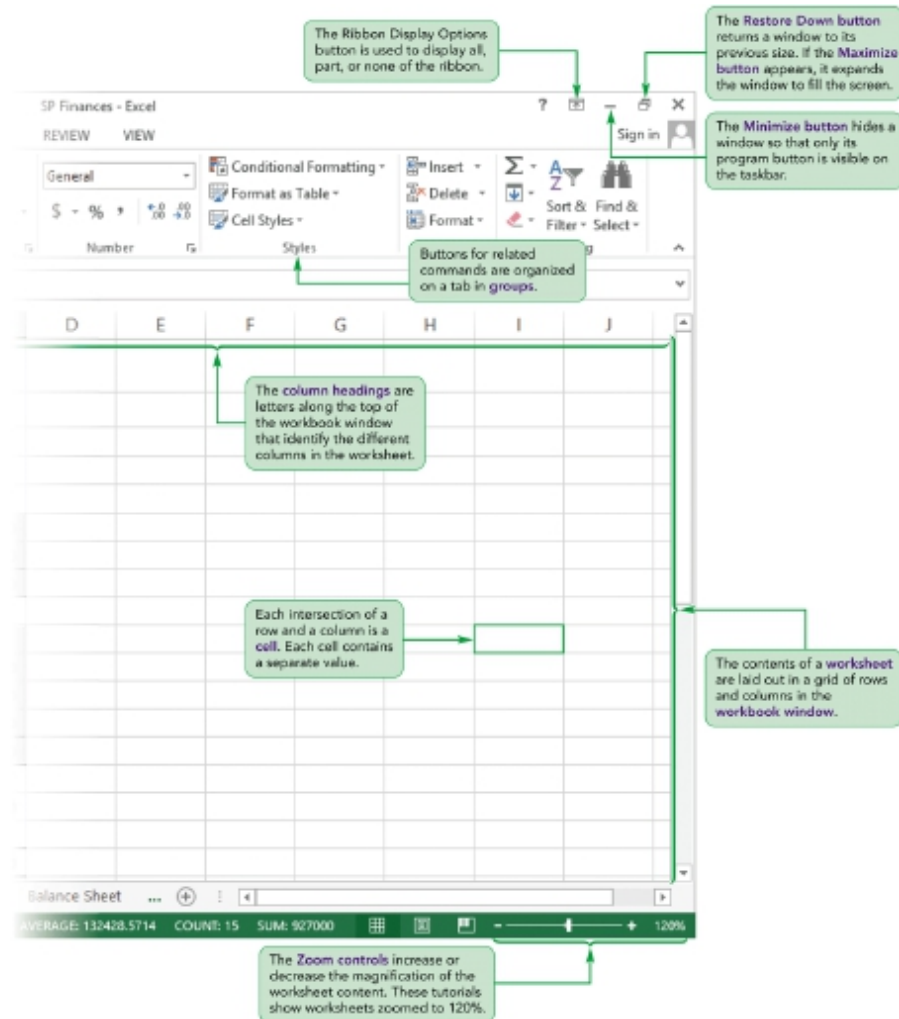
The sheet currently displayed in the workbook window is the active sheet. Its sheet tab is underlined and the sheet name is green and bold.

Income Statement Data:

Sparrow & Pond Income Statement January 1, 2015 to December 31, 2015		
Income		
Gross Sales	\$	258,500
Less returns and allowances		24,500
Net Sales		234,000
Cost of Goods		
Inventory, January 1		121,000
Purchases		72,000
Delivery Charges		12,000
Total Merchandise Handled		205,000
		December 31
Cost of Goods Sold		71,500

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The Excel Window



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Introducing Microsoft Excel 2013

- Computer program used to enter, store, analyze, and present quantitative data in an organized and easily updatable manner
- Creates electronic versions of **spreadsheets**
 - Collection of text and numbers laid out in a grid
- Displays values calculated from data
- Represents data in both text and graphical form through the use of charts

Microsoft Excel 2013 (Continued)

- Allows **what-if analysis**
 - Ability to change values in a spreadsheet and assess the effect they have on calculated values automatically
- Automates many tasks through the use of formulas including both automatic formulas and custom formulas
- A Quick Analysis tool allowing conversion from data to charts in two easy steps

Microsoft Excel 2013 (Continued)

- Integrates data from several spreadsheets within a single workbook, and also interfaces with other workbooks when data from multiple sources is required
- Templates already available for budgets, calendars, forms, and reports
- A new Flash Fill feature allows you to have data automatically entered based on initial data you enter

Microsoft Excel 2013 (Continued)

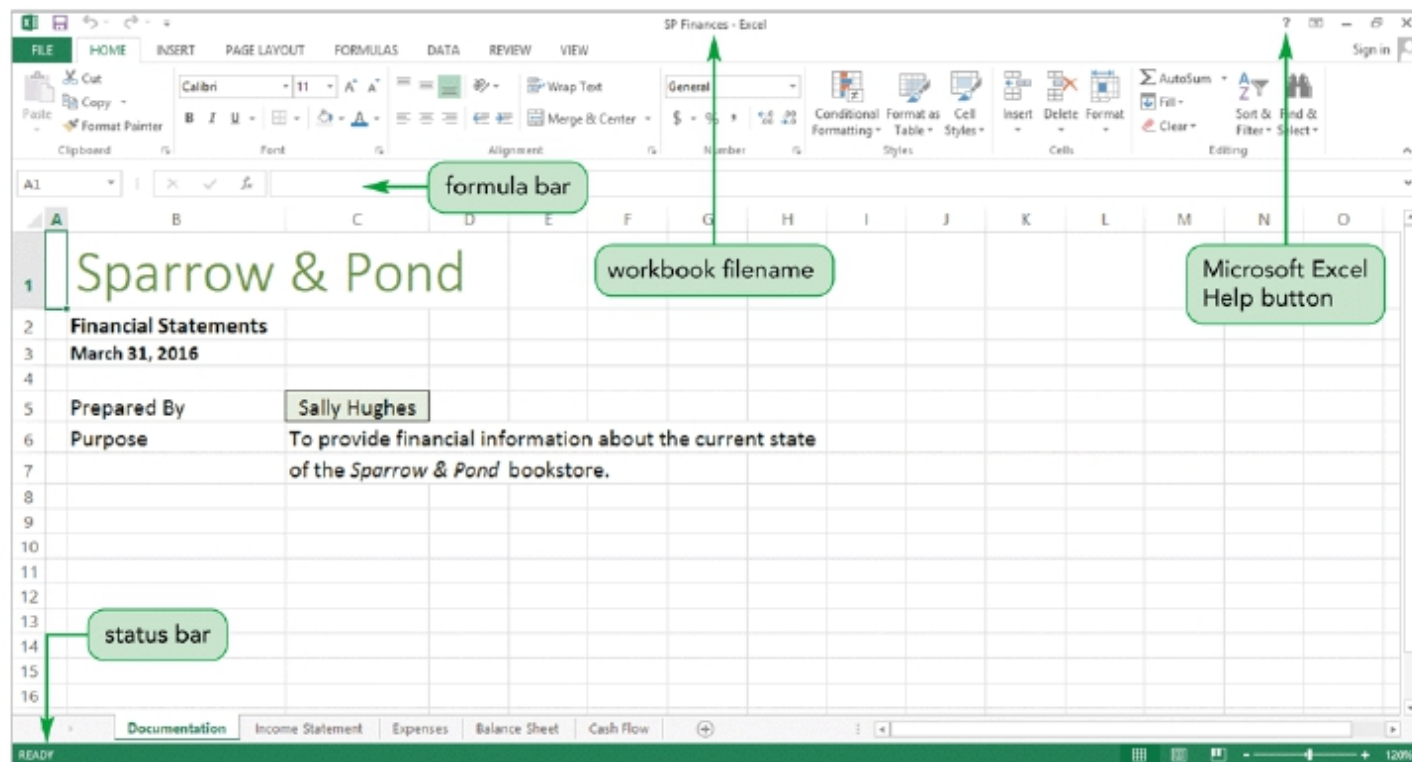
- Excel 2013 offers a Chart Recommendation feature suggesting the best chart to fit your data needs
- Excel also increased filtering functionality adding an interactive way to easily filter data in query tables and Excel data tables
- Excel 2013 adds a One Workbook, One Table feature allowing you to view multiple workbooks simultaneously

Microsoft Excel 2013 (Continued)

- Excel 2013 includes additional functions in several areas including basic math, trigonometry, statistics, look-up, and text functions
- New chart features include additions to the chart ribbon, richer data labeling, and adds animation

Spreadsheet Data in Excel

Figure 1-2 SP Finances workbook



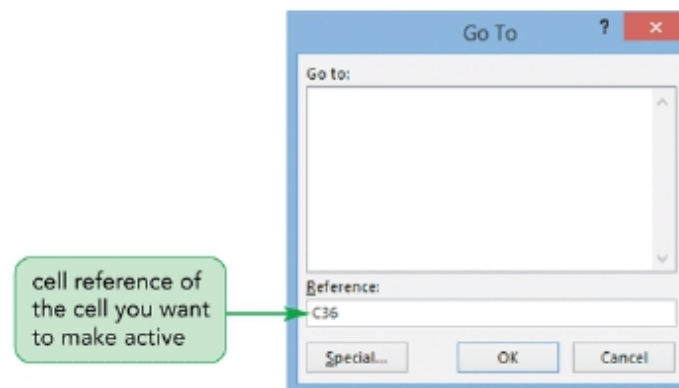
Worksheet Navigation

- A workbook can have two kinds of sheets:
 - Worksheet contains a grid of rows and columns into which user enters data
 - Chart sheet** provides visual representation of data
- **Cell reference** identifies column/row location

Worksheet Navigation

- To navigate between worksheets
 - Use sheet tabs
- To navigate within a worksheet
 - Use mouse, keyboard, GoTo dialog box, or type cell reference in Name box

Figure 1-8 Go To dialog box



Worksheet Navigation Keys

Figure 1-7

Excel navigation keys

Press	To move the active cell
↑↓←→	Up, down, left, or right one cell
Home	To column A of the current row
Ctrl+Home	To cell A1
Ctrl+End	To the last cell in the worksheet that contains data
Enter	Down one row or to the start of the next row of data
Shift+Enter	Up one row
Tab	One column to the right
Shift+Tab	One column to the left
PgUp, PgDn	Up or down one screen
Ctrl+PgUp, Ctrl+PgDn	To the previous or next sheet in the workbook

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Planning a Workbook

- Use a **planning analysis sheet** to define:
 - Goal or purpose of workbook
 - Type of data to collect
 - Formulas needed to apply to data you collected and entered
 - Appearance of workbook content

Creating a New Work Book

- You create new workbooks from the New screen in Backstage view from the Blank workbook template
 - On the ribbon, click the File tab to display Backstage view.
 - Click New in the navigation bar to display the New screen
 - Click the Blank workbook tile.

Working with Worksheets

- Inserting a worksheet
 - Name of new worksheet is based on number and names of other sheets in the workbook
- Deleting a worksheet
- Renaming a worksheet
 - 31 characters maximum, including blank spaces
 - Width of sheet tab adjusts to length of name

Working with Worksheets

- Moving and copying a worksheet
 - To move:
 - Click and drag
 - To copy:
 - Ctrl + drag and drop
 - Place most important worksheets at beginning of workbook (leftmost sheet tabs), less important worksheets toward end (rightmost tabs)
-

Entering Text, Numbers, and Dates

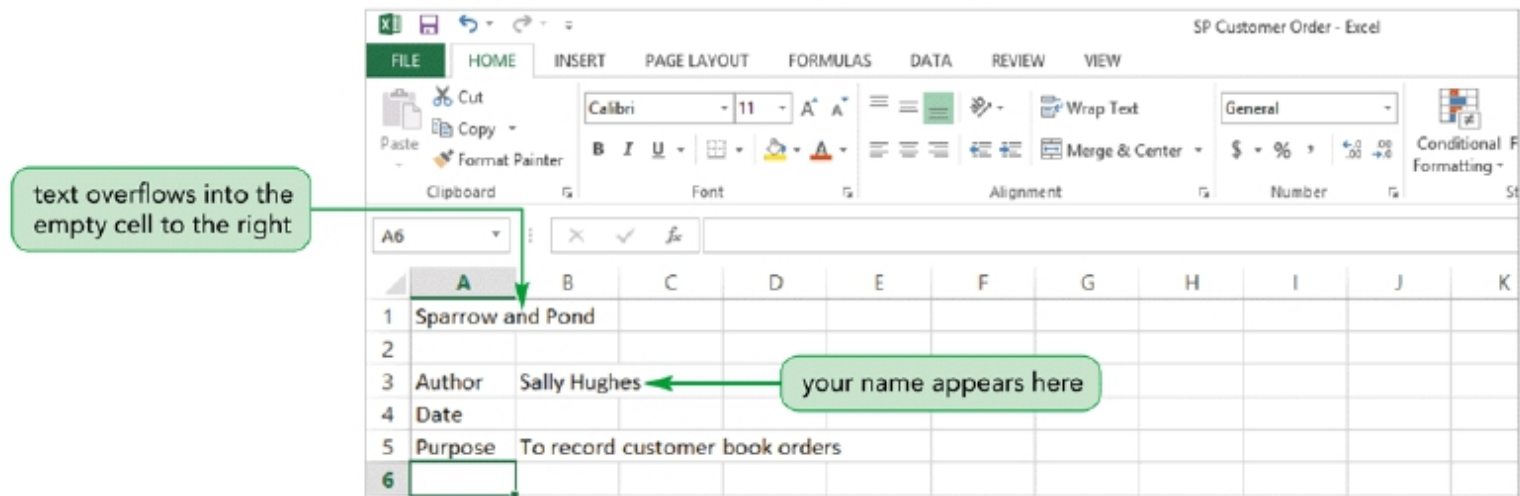
- **Text data**
 - Combination of letters, numbers, and symbols
 - Often referred to as a **text string**
- **Number data**
 - Numerical value to be used in a mathematical calculation
- **Date and time data**
 - Commonly recognized formats for date and time values

Entering Text

- New data appears in both the active cell and the formula bar
- Truncation
- AutoComplete feature
- To enter multiple lines of text within a cell
 - Create a line break with Alt + Enter

Entering Text

Figure 1-12 Documentation sheet



Entering Numbers

Figure 1-18 Price and quantity data

11							
12	ISBN	CATEGOR	BINDING	TITLE	AUTHOR(S)	PRICE	QTY
13	0-374-253	Used	Hardcover	Samurai V	Milton, Gil	\$5.95	2
14	4-889-962	New	Softcover	Floral Orig	Fuse, Tom	\$24.95	3
15	0-500-270	New	Hardcover	Tao Magic	Legeza, La	\$8.95	1
16	0-785-821	Used	Hardcover	The Holy C	Morgan, G	\$3.75	1
17	0-854-565	New	Softcover	Murder or	Christie, A	\$7.50	2
18							
19							

price stored as a number formatted as currency

numbers are right-aligned

Documentation Customer Order

READY

Editing Cell Content

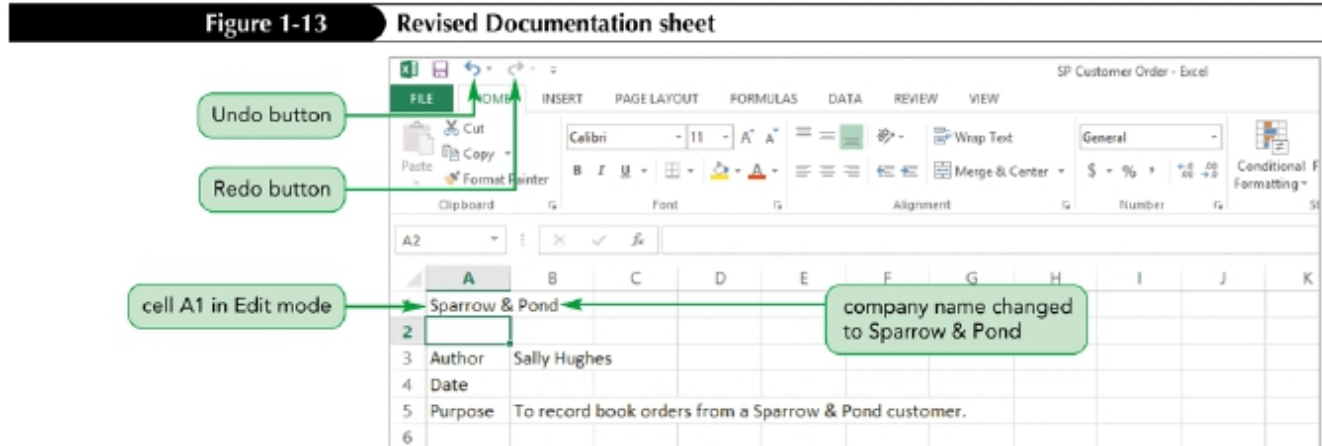
- As you work, you might find entries you need to change or correct.
 - If you want to replace all of the content in a cell, you simply select the cell and then type the new entry to overwrite the previous entry.
 - If you need to replace only part of a cell's content, you can work in **Edit mode**.

Editing Cell Content in Edit Mode

- Edit Mode
 - Double-click the cell to select the cell and switch to Edit mode
 - A blinking insertion point appears within the text of cell
 - Press the arrow keys to move the insertion point to the right of the word being edited
 - Press the Backspace key three times to delete the word being edited
 - Type & to enter the new text, and then press the Enter key

Editing Worksheet Content

- Use **Edit mode** to edit cell contents
 - Keyboard shortcuts apply only to text within selected cell

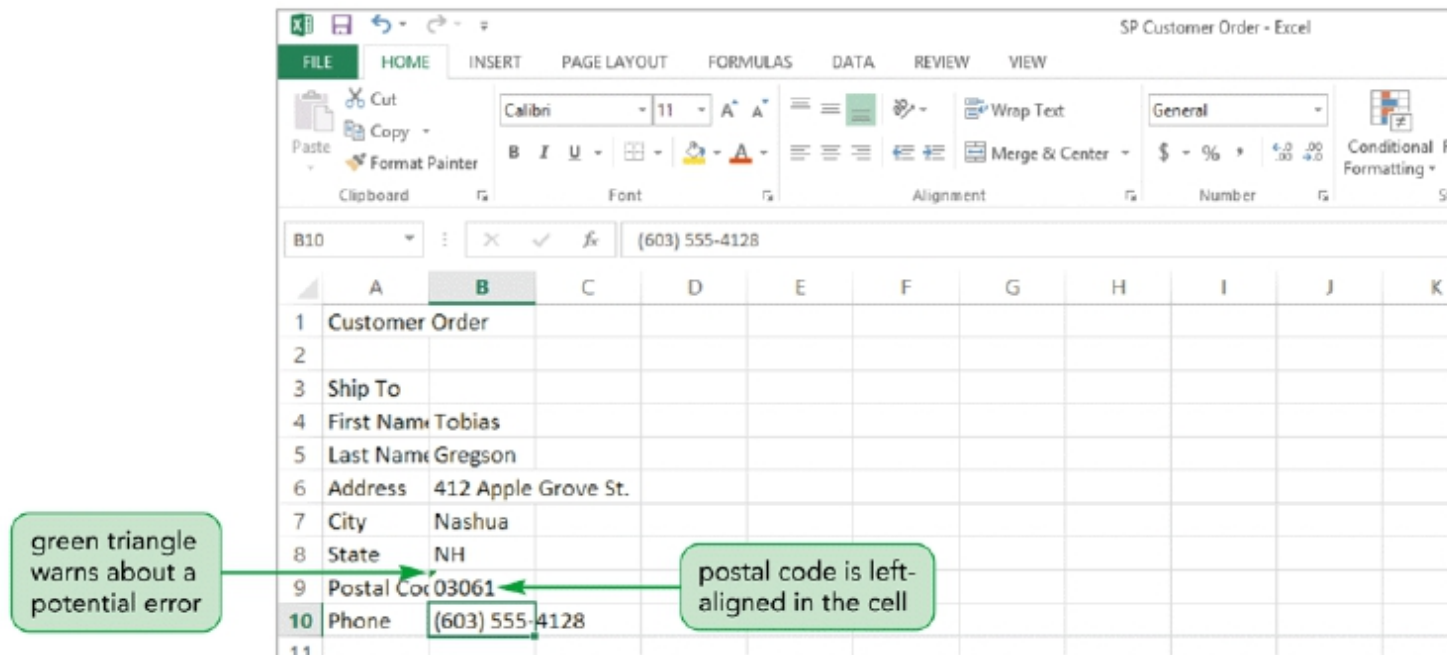


- Undoing and redoing an action
 - Excel maintains a list of actions performed in a workbook during current session

Editing Worksheet Content

- Number displayed as text

Figure 1-15 Number displayed as text



Entering Numbers

Figure 1-18 Price and quantity data

price stored as a number formatted as currency

numbers are right-aligned

11							
12	ISBN	CATEGORY	BINDING	TITLE	AUTHOR(S)	PRICE	QTY
13	0-374-253	Used	Hardcover	Samurai V	Milton, Gil	\$5.95	2
14	4-889-962	New	Softcover	Floral Orig	Fuse, Tom	\$24.95	3
15	0-500-270	New	Hardcover	Tao Magic	Legeza, Le	\$8.95	1
16	0-785-821	Used	Hardcover	The Holy C	Morgan, G	\$3.75	1
17	0-854-565	New	Softcover	Murder or	Christie, A	\$7.50	2
18							
19							

Documentation Customer Order

READY

Working with Columns and Rows

- To make data easier to read:
 - Modify size of columns and rows in a worksheet
- To modify size of columns or rows:
 - Drag border to resize
 - Double-click border to autofit
 - Format the Cells group to specify

Working with Columns and Rows

- Column width
 - Expressed in terms of number of characters or **pixels** (8.43 characters equals 64 pixels)
 - Note: Pixel size is based on screen resolution
- Row height
 - Measured in **points** (1/72 of an inch) or pixels
 - Default row height: 15 points or 20 pixels

Working with Columns and Rows

Figure 1-19 Width of column A increased

ScreenTip shows the column width in characters and pixels

pointer for resizing the column

text in column A fits within the cells

	A	B	C	D	E	F	G	H	I	J
1	Customer Order									
2										
3	Ship To									
4	First Name	Tobias								
5	Last Name	Gregson								
6	Address	412 Apple Grove St.								
7	City	Nashua								
8	State	NH								
9	Postal Code	03061								
10	Phone	(603) 555-4128								
11										
12	ISBN	CATEGORY	BINDING	TITLE	AUTHOR(S)	PRICE	QTY			
13	0-374-25385-4	Used	Hardcover	Samurai V	Milton, Gil	\$5.95	2			
14	4-889-96213-1	New	Softcover	Floral Orig	Fuse, Tom	\$24.95	3			
15	0-500-27062-7	New	Hardcover	Tao Magic	Legeza, Le	\$8.95	1			
16	0-785-82169-4	Used	Hardcover	The Holy C	Morgan, G	\$3.75	1			
17	0-854-56516-7	New	Softcover	Murder on	Christie, A	\$7.50	2			
18										
19										

Working with Columns and Rows

- Resizing columns and rows with AutoFit

Figure 1-20 Resized columns

18 characters in each column

30 characters

15 characters

15 characters

	A	B	C	D	E	F	G
1	Customer Order						
2							
3	Ship To						
4	First Name	Tobias					
5	Last Name	Gregson					
6	Address	412 Apple Grove St.					
7	City	Nashua					
8	State	NH					
9	Postal Code	03061					
10	Phone	(603) 555-4128					
11							
12	ISBN	CATEGORY	BINDING	TITLE	AUTHOR(S)	PRICE	QTY
13	0-374-25385-4	Used	Hardcover	Samurai William: The Englishman V	Milton, Giles	\$5.95	2
14	4-889-96213-1	New	Softcover	Floral Origami Globes	Fuse, Tomoko	\$24.95	3
15	0-500-27062-7	New	Hardcover	Tao Magic: The Secret Language of	Legeza, Laszlo	\$8.95	1
16	0-785-82169-4	Used	Hardcover	The Holy Grail	Morgan, Giles	\$3.75	1
17	0-854-56516-7	New	Softcover	Murder on the Links	Christie, Agatha	\$7.50	2
18							
19							

Working with Columns and Rows

- Deleting and clearing a row or column
 - Deleting removes both the data and the cells
 - Clearing removes the data, leaving blank cells where data had been

Wrapping Text Within a Cell

- Wrapping text enables text to display on two or more rows within one cell allowing more text within a narrower column.
 - Resize the width of column as appropriate.
 - Select the cells you wish to apply wrapping to
 - On the Home tab, in the Alignment group, click the Wrap Text button.
 - The Wrap Text button is toggled on, and text in the selected cells that exceeds the column width wraps to a new line.

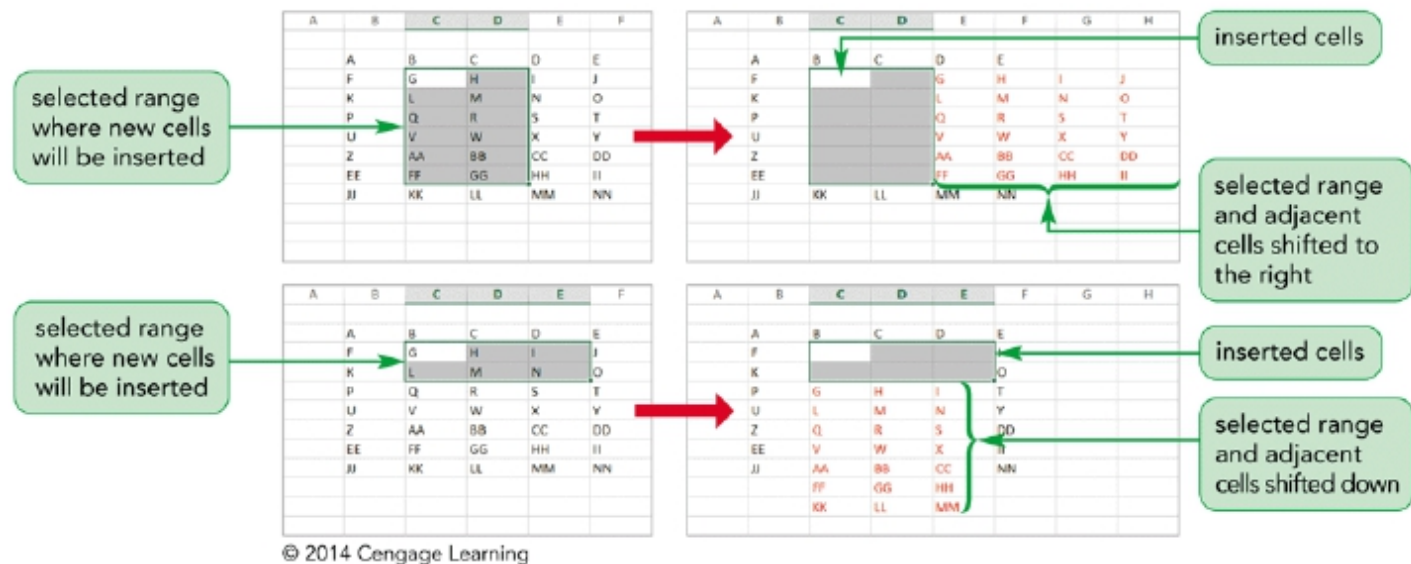
Working with Cells and Ranges

- **Range reference** indicates location and size of a cell range
 - Adjacent (A1:G5)
 - Nonadjacent (A1:A5;F1:G5)
 - Selecting a range
 - Work with all cells in the range as a group
 - Moving and copying a range
 - Drag and drop
 - Cut and paste
-

Working with Cells and Ranges

- Inserting and deleting a range
 - Existing cells shift to accommodate the change

Figure 1-31 Cells being inserted in a worksheet



Moving a cell or a Range of Cells

- Select the cell or range you want to move or copy
- Move the pointer over the border of the selection until the pointer changes shape
- To move the range, click the border and drag the selection to a new location
 - Or to copy the range, hold down the Ctrl key and drag the selection to a new location

Copying a Cell or Range of Cells

- Select the cell or range you want to move or copy
- On the Home tab, click the Cut or Copy button
 - Or right-click the selection, and then click Cut or Copy on the shortcut menu
- Select the cell or the upper-left cell of the range where you want to paste the content
- Click the Paste button

Visual Overview

The font size refers to how big the text is.

You use the PAGE LAYOUT tab to change how the worksheet will appear on the printed page.

In Excel, every formula begins with an equal sign (=).

When the active cell contains a formula, the formula appears in the formula bar but the result of the formula appears in the cell.

The gridlines that surround cells appear on the worksheet as a guide; they do not print.

A border is a line you can add along an edge of a cell. Borders are used to improve the readability of data.

SP Customer Order - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

Paste Calibri 11 A+ A- B I U Font Alignment Number

Clipboard Font Alignment Number

123 X ✓ fx =G23*H23

	A	B	C	D	E
9	Ship To				
10	First Name	Tobias			
11	Last Name	Gregson			
12	Address	412 Apple Grove St.			
13	City	Nashua			
14	State	NH			
15	Postal Code	03061			
16	Phone	(603) 555-4128			
17					
18	BOOK ID	ISBN	CATEGORY	BINDING	TITLE
19	25385-Used	0-374-25385-4	Used	Hardcover	Samurai William: The Who Opened Japan
20	96213-New	4-889-96213-1	New	Softcover	Floral Origami Globes
21	01089-Used	0-151-01089-7	Used	Hardcover	Pops: A Life of Louis A
22	27062-New	0-500-27062-7	New	Hardcover	Tao Magic: The Secret Diagrams and Calligra
23	56516-New	0-854-56516-7	New	Softcover	Murder on the Links
24					
25					
26					
27					
28					
29					

Documentation Customer Order

READY

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Worksheet Data

Customer Order - Excel

REVIEW VIEW

Currency: \$ - % +.00 .00

Number Styles

Conditional Formatting = Insert = Delete = Format =

Sign in

AutoSum quickly inserts functions to sum, average, or count values in a range, or find the minimum or maximum value in a range.

A function is a named operation that replaces the action of an arithmetic expression.

The SUM function adds the values in the specified range.

A formula is an expression that calculates a value. These formulas multiply values in different cells.

Normal view shows the contents of the active sheet in the workbook window.

Page Layout view shows how the sheet will appear when printed.

Page Break Preview shows the location of page breaks in the printed sheet.

TITLE	AUTHOR(S)	PRICE	QTY	CHARGE
Samurai William: The Englishman Who Opened Japan	Milton, Giles	\$5.95	2	\$11.90
Floral Origami Globes	Fuse, Tomoko	\$24.95	3	\$74.85
Pops: A Life of Louis Armstrong	Teachout, Terry	\$11.95	2	\$23.90
Tao Magic: The Secret Language of Diagrams and Calligraphy	Legeza, Laszlo	\$8.95	1	\$8.95
Murder on the Links	Agatha	\$7.50	2	\$15.00
Subtotal				\$134.60
Tax				\$6.73
Handling				\$15.30
TOTAL				\$156.63

Formulas shown in the worksheet:

- `=G19*H19`
- `=G20*H20`
- `=G21*H21`
- `=SUM(I19:I23)`
- `=I17*I25`
- `15.3`
- `=SUM(I25:I27)`

Working with Formulas

- **Formula**
 - An expression that returns a value
 - Written using **operators** that combine different values, resulting in a single displayed value

Figure 1-22 Arithmetic operators

Operation	Arithmetic Operator	Example	Description
Addition	+	=B1+B2+B3	Adds the values in cells B1, B2, and B3
Subtraction	-	=C9-B2	Subtracts the value in cell B2 from the value in cell C9
Multiplication	*	=C9*B9	Multiplies the values in cells C9 and B9
Division	/	=C9/B9	Divides the value in cell C9 by the value in cell B9
Exponentiation	^	=B5^3	Raises the value of cell B5 to the third power

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Working with Formulas

- Entering a formula
 - Click cell where you want formula results to appear
 - Type = and an expression that calculates a value using cell references and arithmetic operators
 - Cell references allow you to change values used in the calculation without having to modify the formula itself
 - Press Enter or Tab to complete the formula
-

Working with Formulas

- **Order of precedence**
 - Set of predefined rules used to determine sequence in which operators are applied in a calculation

Figure 1-23 Order of operations applied to Excel formulas

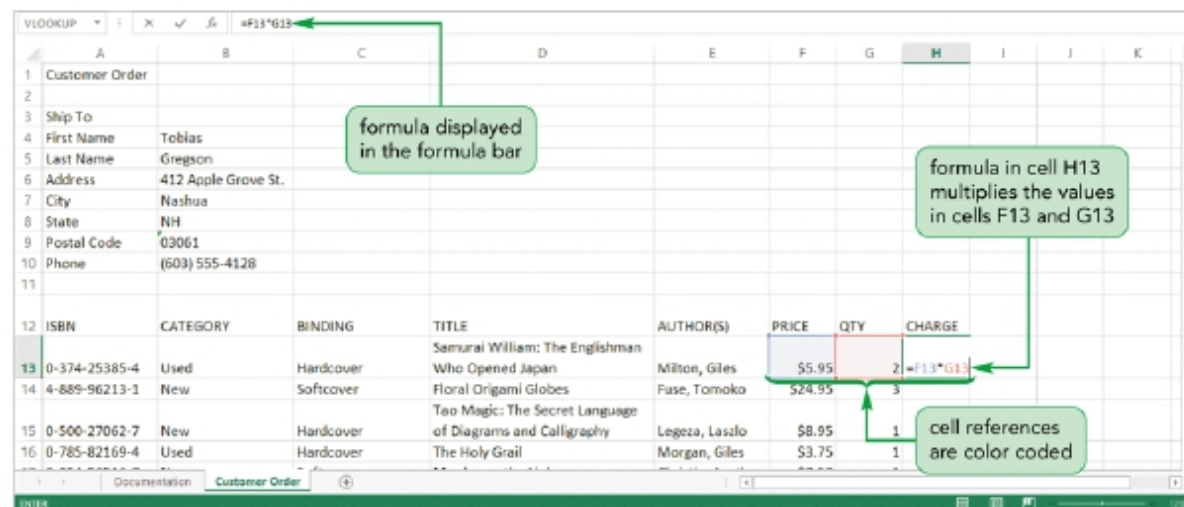
Formula	Application of the Order of Operations	Result
=50+10*5	10*5 calculated first and then 50 is added	100
=(50+10)*5	(50+10) calculated first and then 60 is multiplied by 5	300
=50/10-5	50/10 calculated first and then 5 is subtracted	0
=50/(10-5)	(10-5) calculated first and then 50 is divided by that value	10
=50/10*5	Two operators at same precedence level, so the calculation is done left to right in the expression	25
=50/(10*5)	(10*5) is calculated first and then 50 is divided by that value	1

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Working with Formulas

- Viewing a formula
 - Select cell and review expression displayed in the formula bar
 - Each cell reference is color coded in the formula and corresponding cell in the worksheet

Figure 1-24 Formula being entered in a cell



Working with Formulas

- Copying and pasting formulas
 - Cell references adjust to reflect new location of the formula in the worksheet

Figure 1-25 Copied and pasted formula

SP Customer Order - Excel

VIEW

Wrap Text Merge & Center Currency \$ % Number Conditional Formatting Table Cell Styles Insert Delete Format AutoSum Fill Clear Sort & Find & Filter Select

	D	E	F	G	H	I	J	K
E		AUTHOR(S)	PRICE	QTY	CHARGE			
	urai William: The Englishman							
	o Opened Japan	Milton, Giles	\$5.95	2	\$11.90			
	al Origami Globes	Fuse, Tomoko	\$24.95	3	\$74.85			
	Magic: The Secret Language							
	agrams and Calligraphy	Legeza, Laszlo	\$8.95	1	\$8.95			
	Holy Grail	Morgan, Giles	\$3.75	1	\$3.75			
	der on the Links	Christie, Agatha	\$7.50	2	\$15.00			

button provides more options for pasting formulas and values

formula pasted into the selected cells

Working with Formulas

- Guidelines for writing effective formulas:
 - Keep them simple
 - Do not hide data values within formulas
 - Break up formulas to show intermediate results

Introducing Functions

- **Function**

- Named operation that returns a value
- Simplifies a formula, reducing a long formula into a compact statement; for example, to add values in the range A1:A10:

- Enter the long formula:

`=A1+A2+A3+A4+A5+A6+A7+A8+A9+A10`

- or -

- Use the SUM function to accomplish the same thing:

`=SUM(A1:A10)`

Entering Functions with AutoSum

- Fast, convenient way to enter commonly used functions
- Includes buttons to quickly insert/generate:
 - Sum of values in column or row (SUM)
 - Average value in column or row (AVERAGE)
 - Total count of numeric values in column or row (COUNT)
 - Minimum value in column or row (MIN)
 - Maximum value in column or row (MAX)

Entering Functions with AutoSum

Figure 1-26 SUM function being entered with the AutoSum button

The screenshot shows the Excel interface with the following data in the spreadsheet:

ISBN	CATEGORY	BINDING	TITLE	AUTHOR(S)	PRICE	QTY	CHARGE
0-374-25385-4	Used	Hardcover	Samurai William: The Englishman	Milton, Giles	\$5.95	2	\$11.90
4-889-96213-1	New	Softcover	Who Opened Japan	Fuse, Tomoko	\$24.95	3	\$74.85
0-500-27062-7	New	Hardcover	Floral Origami Globes	Legeza, Laszlo	\$8.95	1	\$8.95
0-785-82169-4	Used	Hardcover	Tao Magic: The Secret Language of Diagrams and Calligraphy	Morgan, Giles	\$3.75	1	\$3.75
0-854-56516-7	New	Softcover	The Holy Grail	Christie, Agatha	\$7.50	2	\$15.00

Callouts in the image:

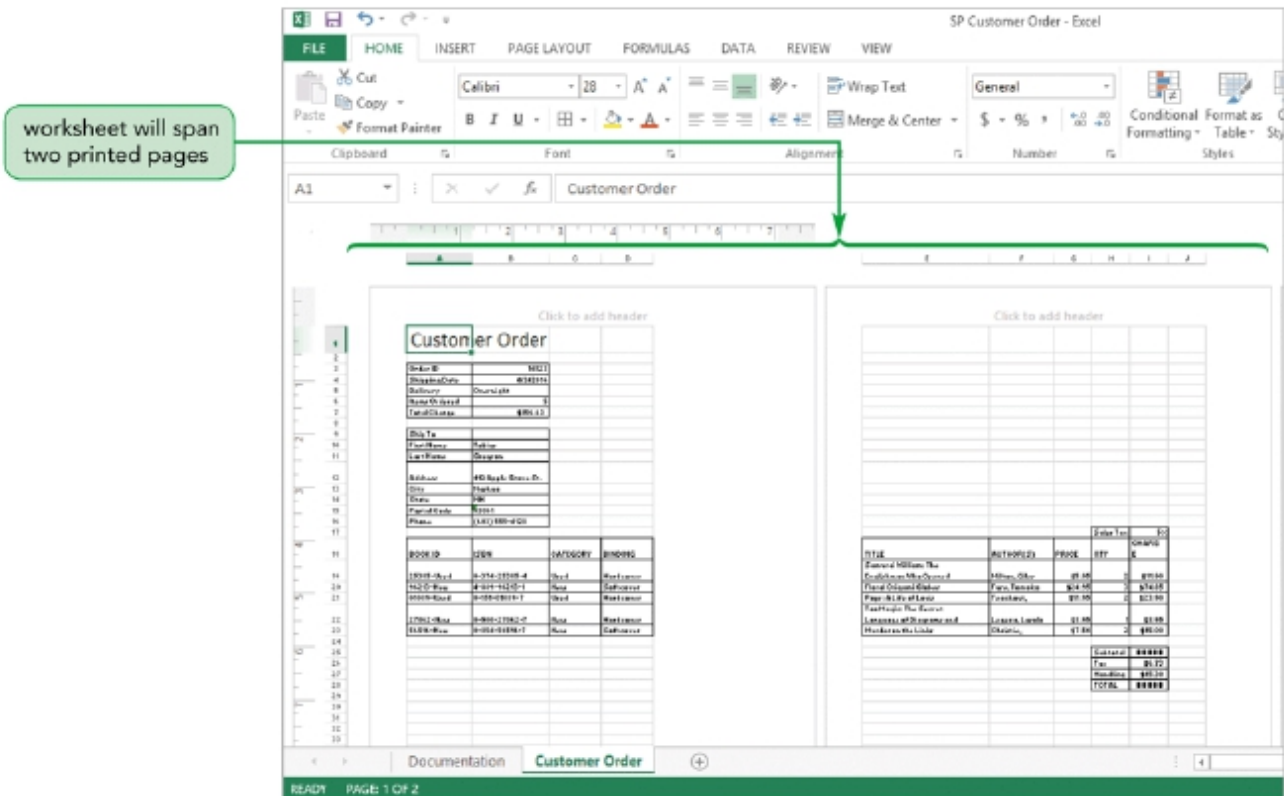
- AutoSum button arrow:** Points to the AutoSum button in the ribbon.
- formula appears in the formula bar:** Points to the formula bar showing `=SUM(H13:H17)`.
- cells used in the function are highlighted:** Points to the range H13:H17 in the spreadsheet.
- SUM function adds the values in the selected range:** Points to the formula bar.
- ScreenTip shows the syntax of the SUM function:** Points to the screen tip showing `SUM(number1, [number2], ...)`.
- range reference:** Points to the range `H13:H17` in the formula bar.

Previewing a Workbook

- Changing worksheet views
 - **Normal view**
 - **Page Layout view**
 - **Page Break Preview**

Page Layout View

Figure 1-37 Worksheet in Page Layout view



Page Break Preview

Figure 1-38 Worksheet in Page Break Preview

page 1 of the printout

page 2 of the printout

BOOKID	ISBN	CATEGORY	BINDING	TITLE	AUTHOR(S)	PRICE	QTY	CHARGE
25385-Used	0-374-25385-4	Used	Hardcover	Samurai William: The Englishman Who Opened	Milton, Giles	\$5.95	2	\$11.90
36213-New	4-603-36213-1	New	Softcover	Floral Origami Globes	Fuse, Tomoko	\$24.95	3	\$74.85
01009-Used	0-151-01009-7	Used	Hardcover	Pops: A Life of Louis Armstrong	Teachout,	\$11.95	2	\$23.90
27062-New	0-500-27062-7	New	Hardcover	Tao Magic: The Secret Language of Diagrams and	Legg, Lazzlo	\$8.95	1	\$8.95
56516-New	0-654-56516-7	New	Softcover	Murder on the Links	Christie,	\$7.50	2	\$15.00
Subtotal								\$134.60
Tax								\$6.73
Handling								\$15.30
TOTAL								\$156.63

Previewing a Workbook

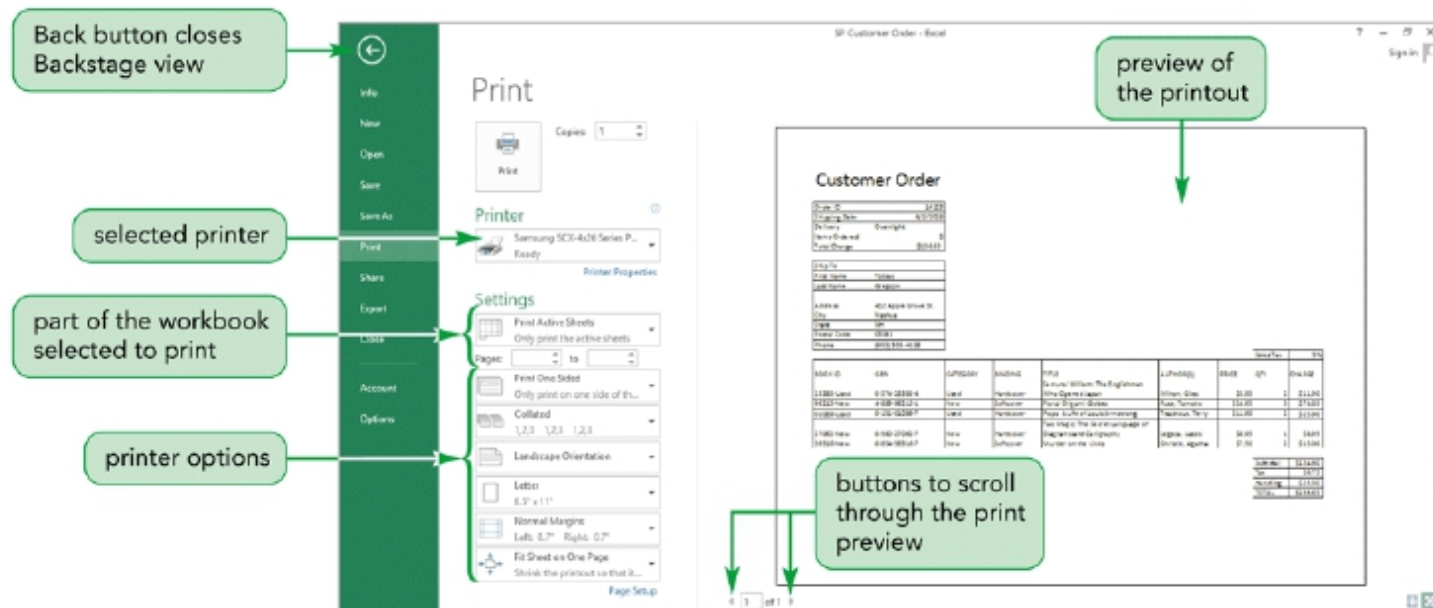
- Working with page orientation
 - **Portrait orientation** (default)
 - Page is taller than wide
 - **Landscape orientation**
 - Page is wider than tall

Printing a Workbook

- Print tab provides options for choosing what to print and how to print
 - Printout includes only the data in the worksheet
 - Other elements (e.g., row/column headings, gridlines) will not print by default
 - Good practice: Review print preview before printing to ensure that printout looks exactly as you intended and avoid unnecessary reprinting
-

Printing a Workbook

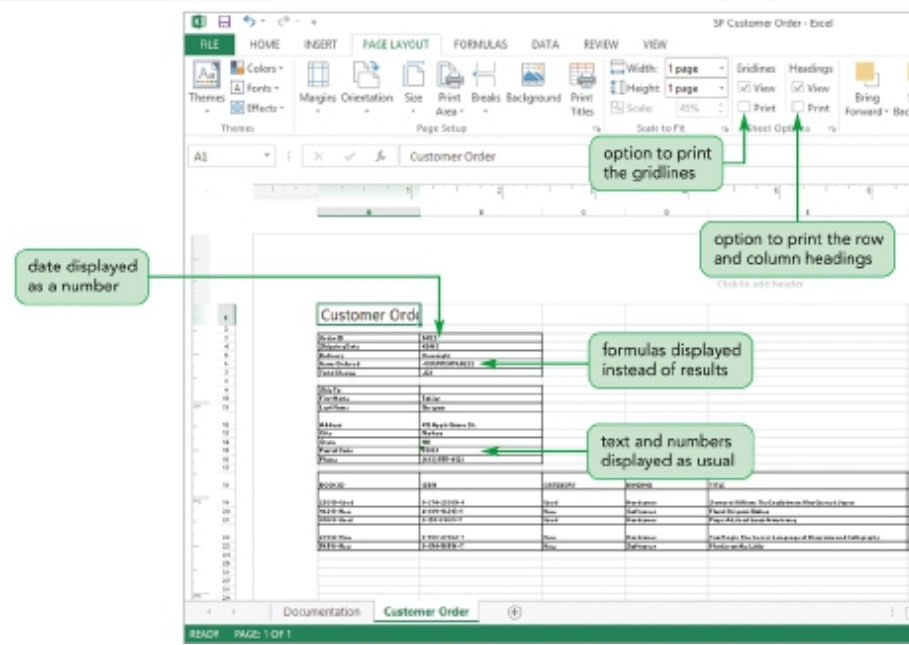
Figure 1-40 Print screen in Backstage view



Viewing and Printing Worksheet Formulas

- Switch to **formula view**
 - Useful when you encounter unexpected results and want to examine underlying formulas or to discuss your formulas with a colleague

Figure 1-41 Worksheet with formulas displayed



Viewing and Printing Worksheet Formulas

- **Scaling** the printout of a worksheet forces contents to fit on a single page

Figure 1-39 Printout scaled to fit on one page

